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INVERTEBRATE CONSERVATION NEWS



No. 66, October 2011

EDITORIAL

As pointed out six years ago in an *ICN* editorial (June 2005), losses of biodiversity cannot be prevented simply by the designation of sites that are considered to be of special importance for conservation. There is, however, little sign that this “inconvenient truth” has entered the minds of leading policy-makers, at least here in the UK.

The protection of sites under various forms of official designation makes it possible to impose conservation measures that, for economic reasons, would generally not be feasible within the wider landscape. Within that wider landscape, however, a network of suitable sites is essential for the long-term survival of populations of many invertebrate species of limited mobility. If the successful dispersal of such species between sites is prevented, episodes of chance local extinction can lead to extinction at a regional, national or even global level. Also, where the geographic ranges of species are being affected by climate change, such dispersal is essential in the process whereby climate-induced retraction in part of a range can be matched by extension elsewhere. Where populations of certain favoured species persist only at a few isolated sites, they can probably be maintained for many years through dedicated management but only at a price and perhaps to the detriment of other species that require different conditions.

In the UK, conservation organisations have been sifting through a bewildering flurry of UK government policy documents, some of which, such as the Natural Environment White Paper and the England Biodiversity Strategy, recognise the need for “connectivity of habitats”. There are, however, signs that this recognition does not permeate other aspects of government policy. There is particular cause for concern



about the new National Planning Policy Framework (NPPF) for England. Far from abandoning the outmoded idea that conservation can be achieved principally by protecting "top-rank" designated sites, the NPPF appears to give developers the green light to build on any site that does not have a very high level of designation. As mentioned in one of the articles in this issue of *ICN*, sacrosanct status would be accorded only to internationally designated sites. There would also be a considerable degree of protection for nationally designated sites, principally Sites of Special Scientific Interest (SSSIs), but this appears to be a concession beyond which the UK government does not wish to go.

As mentioned in the June 2005 *ICN* editorial, over-reliance on designation (both of sites and species) is particularly inadequate in the face of proposals for harmful urban or industrial development. Even under the currently weak system that currently exists in the UK, let alone under the proposed presumption in favour of "sustainable development", planning authorities are not required to consider biodiversity seriously unless the site concerned has been formally designated or if it supports legally protected species. Even where such a species is present, the authorities sometimes give planning consent in return for some concession of doubtful value, such as the translocation of specimens to another site.

The UK government's desire to streamline the planning system can be seen as demonstrating an awareness that over-regulation, however well-intentioned it might be, can engender resentment in various sections of society and that there might be considerable public support for policies that purport to lighten regulatory burdens. With regard to wildlife protection, government ministers have spoken of laws that have accumulated like geological strata and that now need to be rationalised.

In the spirit of easing burdensome regulation, perhaps there could be opportunities to revise the UK's existing systems of habitat protection in order to encourage a more co-operative relationship between landowners and the statutory agencies. Perhaps this could be achieved partly by enhancing agri-environment schemes that provide landowners and managers with economic incentives and with a sense of ownership, rather than of alienation. As argued in the *ICN* June 2005 editorial, many of them have a genuine concern for wildlife, even if they have felt economically compelled to adopt ecologically harmful practices. On the other hand, they sometimes resent laws that intrude upon their freedom to manage their own land. Resentment of statutory intrusion not only works against a spirit of partnership; it also creates difficulties for biological recorders when seeking permission to enter sites.



There has been considerable public debate over the proposed changes in the English planning system but this has focussed mainly on the perceived threat that a green light for developers would lead to urban sprawl. The UK government has denied that such a danger exists, pointing out that the existing system of containment of urban boundaries by the Green Belt would be upheld. There has, however, been continuing concern about the over-development of "greenfield" land that is not designated as Green Belt. Unfortunately, there has been almost no mention of the ecological value of many sites that, having formerly been developed, are lumped together under the "brownfield" category. Indeed, influential organisations and individuals seem to have persuaded the UK government to amend the policy in order to add a clear statement that brownfield sites should always be re-developed in preference to the development of greenfield sites.

On certain issues, such as the brownfield versus greenfield debate, differences of opinion have prevented UK conservation organisations from presenting a wholly consistent argument in their responses to the recent plethora of government policy proposals. It is to be hoped, however, that a greater unity of purpose will emerge in the argument that conservation cannot be sustained merely by reliance on the protection of top-rank designated sites.



NEWS, VIEWS AND GENERAL INFORMATION

Wildlife Law in England and Wales: review of protected species

Under the Wildlife and Countryside Act 1981, the listing of protected invertebrates in England and Wales has to be reviewed every five years. The fifth quinquennial review of Schedule 5 of the Act started in 2006 and was completed in the summer of this year following severe delay, just as the sixth review is due to be taking place. The amendments to the list of invertebrates on Schedule 5 came into effect on 1st October 2011 and are as follows:

- Talisker Burnet moth (*Zygaena lonicerae* ssp. *jocelynae*)

This moth is added to Schedule 5 in respect of sale only [Section 9(5)] for the time being, but with provision also to ban taking or killing [Section 9(1)] and possession/control [Section 9(2)] in the event of full protection being imposed in Scotland.



- Slender Scotch Burnet Moth (*Zygaena loti* ssp. *scotica*) added: as for the Talisker burnet.
- Essex Emerald Moth (*Thetidia smaragdaria*) removed, since it is known to be extinct in England and Wales.
- Tentacled Lagoon Worm (*Alkmaria romijni*)
Protection is reduced from "full" [Section 9, all subsections] to damage, destruction of places of shelter [Section 9(4)(a)] only.
- Lagoon Sand Shrimp (*Gammarus insensibilis*)
This shrimp is removed from the Schedule. It was previously fully protected but is now known to be more common than previously considered.

It is interesting that *Alkmaria romijni* has been re-scheduled so as to be protected only from damage or disturbance of its places of shelter. This change will be welcomed by prospective survey workers, who might need to remove specimens. No such change has yet been made for any terrestrial invertebrates but the re-scheduling of *A. romijni* might be a helpful precedent whereby invertebrates can be selectively protected from habitat damage without any inappropriate criminalisation of collectors.

Under the sixth quinquennial review, a proposed list of changes is due to be issued for consultation in 2012. Invertebrate Link, the UK's umbrella group of organisations involved in invertebrate conservation, has a working group with a remit to develop proposals for the review.

National Planning Policy Framework (England)

The UK government's proposals to change the planning system in England have potentially far-reaching consequences for conservation, since the only sites to be more or less sacrosanct for the sake of wildlife would be those few that have some form of international designation. For nationally designated sites, principally Sites of Special Scientific Interest, there would be a requirement for careful consideration as to whether a proposed development should be permitted. Other sites could be protected only if, prior to a planning application being lodged, they had been identified in a Local Plan as being of special value to a local community.

Owing to a lack of resources for site survey and evaluation, it is very unlikely that more than a very few sites would be protected under Local Plans. The current situation admittedly allows many important habitats to be destroyed on sites that are not internationally or



nationally designated but it is more protective of such sites than the proposed Framework.

There was a three-month public consultation, which ended on 17th October: too soon for a concerted response to be made by the umbrella group Invertebrate Link. The Invertebrate Link Executive Committee therefore drew up some notes of guidance for member-organisations that might wish to respond to the consultation individually. The drafting was done by AES representative David Lonsdale, with additional advice from Sarah Henshall of Buglife – The Invertebrate Conservation Trust.

The AES was one of several member-organisations that submitted responses. The AES response focussed mainly on the need to maintain a network of habitats throughout the landscape; not just the isolated “top-rank” designated sites that would receive full protection under the proposed Framework. Attention was drawn to the fact the UK government’s own policies on biodiversity take account of the need for “ecological networks” and that this laudable approach is inconsistent with the Framework.

It is planned to comment on other UK government policies in a future issue of *ICN*. These include the Natural Environment White Paper and the England Biodiversity Strategy. Meanwhile, readers might be interested to know that the AES submitted responses to another public consultation; on the proposed high-speed rail link between London and Birmingham, which would affect a number of important sites. These include Perivale nature reserve in West London. This is run by the Selborne Society, which is affiliated to the AES.



SITES AND SPECIES OF INTEREST

The Killer Shrimp in the UK: an update

As mentioned in *ICN* No. 64, the Killer shrimp *Dikerogammarus villosus*, an invasive species from the Caucasian region, was discovered at two sites in South Wales (in Cardiff Bay and Eglwys Nunydd reservoir near Port Talbot and at Grafham Water in Cambridgeshire) last year. In a recent article (Madgwick & Aldridge, 2011), the threat posed by *D. villosus* to native British flora and fauna has been assessed. The assessment does not make comforting news, since there is considerable evidence of harm in other parts of Europe where *D.*



villosus has been present for a number of years. Owing to its reportedly voracious feeding habits and its rapid rate of reproduction, it seems capable of causing the local extinction of various species and of generally causing the diversity and complexity of aquatic communities to decline.

The Killer shrimp is quite likely to spread beyond the initial three UK sites but the good news is that no such spread has so far been detected within 4,300 monitoring sites across England and Wales (Anon., 2011). The apparent absence of spread is thought to owe much to a bio-security awareness campaign, whereby the anglers and other users of water bodies are reminded to prevent dispersal of the shrimp via their waders, nets and other equipment. The slogan is “*Stop the Spread – Check, Clean and Dry*”.

In addition to the above review by Madgwick and Aldridge (2011), a research project is under way at Cambridge University, with the support of the Esmée Fairbairn Foundation and Natural England. The project, which also involves Leeds University and Queen's University Belfast, involves an appraisal of data from the European continent in order to help predict the likely range of prey species and the impact of predation by the shrimp in the UK. Also, a team in the government's Centre for Environment, Fisheries & Aquaculture Science (CEFAS) has assessed the suitability and safety of various chemical and other treatments that might be considered in combination with the “*Check, Clean and Dry*” routine to help prevent spread of the shrimps via objects such as waders or fishing tackle. The team's findings indicate that hot water dips would be safer as a means of killing attached shrimps than chemicals, which are more hazardous. Carbonated water could alternatively be used to narcotise the shrimps, which could then be detached from the equipment by agitation (Stebbing, Sebire & Lyons, 2011). Any form of treatment would, however, need to be developed further before it could be recommended.

Meanwhile, any suspected sightings of *D. villosus* at any site beyond the three known ones should be reported via the GB Non-native Species Secretariat website (www.nonnativespecies.org/alerts/killershrimp) or by e-mail to: nonnative@ceh.ac.uk. To avoid confusion with native shrimps, the website should be consulted for guidance on identification. Similar guidance is provided by Madgwick and Aldridge (2011).

References

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Rare bees in south-east England

Entomologist Steven Falk has recently published the results of a bee and wasp survey that he conducted at fifteen sites on the South Downs of East Sussex in the period 2003 to 2008. The sites comprised chalk grassland and chalk heathland, both of which have been greatly depleted by the intensification of farming and by urban development.

During 100 visits to the sites, Steven recorded 227 bee and wasp species and obtained information not only about their comparative frequency but also about the species-richness of different types of site. He has thus been able to show how many of these species depend on particular aspects of the structure of vegetation, as determined by site management.

Perhaps Steven's most exciting find was the bee *Halictus eurygnathus* Blüthgen, which had not been recorded in Britain since 1946. He found it at seven of the sites and he observed that it was associated with an abundance of Greater Knapweed *Centaurea scabiosa*. Other national rarities that he found included the bees *Anthophora retusa* (Linnaeus) and *Andrena niveata* Friese, for which he was able gain information about conservation requirements.

Despite the excitement of re-discovering *H. eurygnathus* in Britain, various other rare species were either not found during the survey or were found only in low numbers. Steven considers that their decline and in some cases regional extinction could be attributed to the loss and fragmentation of unimproved chalk grassland that occurred on a large scale within the South Downs during the last century.

Steven observed that many of the species that survive on the South Downs today are able to find the flowers that they need not only in unimproved grassland but also in hedgerows and field margins of arable land. Also they can find suitable flowers such as dandelions *Taraxacum* spp. and thistles *Cirsium* spp. etc. in pasture that has been partly improved, or in certain crops, such as Oilseed rape *Brassica oleifera*.

With regard to grassland management, Steven notes that grazing by livestock was sometimes too intensive to provide the mixed-height sward that not only bees and wasps but many other invertebrates require. He



observed that considerable benefit could be obtained by excluding livestock for varying periods. One site, where grazing by horses was periodically excluded, contained some of the densest stands of key forage plants such as Common Bird's-foot Trefoil *Lotus corniculatus*, mignonettes *Reseda* spp., hawkweeds *Hieracium* spp. etc., knapweeds *Centaurea* spp., Wild Carrot *Daucus carota* and Burnet-saxifrage *Pimpinella saxifraga*. The site concerned supported one of the strongest populations of the newly re-discovered *H. eurygnathus*, together with a well-above-average number of other scarce species.

Some sites in the survey were being managed for conservation, mainly with butterflies in mind. Steven observed that such management, sometimes by mowing, also seemed reasonably suitable for downland bees and wasps but that it was probably being implemented over-zealously in parts of the Beachy Head coastal area, to the detriment of high-quality chalk grassland.

One of the species that Steven lists as extinct in the South Downs and in Britain as a whole is the Short-haired bumblebee *Bombus subterraneus*. This species has recently been the subject of a re-introduction project further east in the county of Kent, where the Royal Society of the Protection of Birds (RSPB) has a reserve at Dungeness. The RSPB has been working there with the statutory agency Natural England, and with the Bumblebee Conservation Trust, Hymettus and Swift Ecology.

In its latest report to Invertebrate Link (Sears & Gurney, 2011), the RSPB states that the aim of the project is not only to re-establish *B. subterraneus* in Britain but also to increase the area of suitable bumblebee habitat in SE England. There was a plan to obtain captive-bred stock from New Zealand, where the species was introduced from the UK as a pollinator for clover many years ago. Attempts at captive-breeding in New Zealand have, however, been unsuccessful. Also there is evidence that the population there has been through a genetic bottleneck. The new plan, subject to Natural England approval, is to introduce the species from Sweden following disease screening, which is currently under way. Meanwhile wildflower meadows have been created at the RSPB reserve and are reported to be attracting other rare bees such as the Shrill Carder bee *B. sylvarum* and the Large garden bumblebee *B. ruderatus*.

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websites of the Bees Wasps and Ants Recording Society (www.bwars.com) and the Sussex Biodiversity Record Centre (<http://sxbrc.org.uk>).

Sears, J. & Gurney, M. Update on the RSPB's Invertebrate conservation work during 2011. A report to the Invertebrate Link meeting, 20th October 2011.

Noble chafer rediscovered in Buckinghamshire

The Noble chafer *Gnorimus nobilis* has become one of Britain's rarest beetles. As mentioned in ICN No. 45, this metallic bronze-green chafer requires decaying ancient fruit trees in old orchards, in which its larvae develop. It is a Biodiversity Action Plan (BAP) Priority Species, with the People's Trust for Endangered Species as the Lead Partner. The grubbing up of increasingly uneconomic old orchards has been a major factor in its decline, to the extent that it seems to have disappeared entirely from various English counties. The latest news is, however, that the beetle has recently been found still to occur in Buckinghamshire.

The recent report originated with a query from Matt Dodds to iSpot, the identification website. Matt found a chafer larva in a rot hole in a 90 year-old traditional orchard at Edelsborough. His photographs and the habitat looked convincing enough to suggest an identification of *G. nobilis* and Mark Telfer and Martin Harvey visited the site. They confirmed the presence of two larvae of *G. nobilis* in hollows of damson trees and also found fragments of at least four dead adults, together with the characteristic frass of the beetle in six trees.

As previously reported on the iSpot website, another very rare species, the Variable chafer *G. variabilis* was recorded by Matt Smith in the neighbouring county of Berkshire at Windsor Forest last year.



PUBLICATIONS

Review: Wasps of Surrey by David W. Baldock, published by Surrey Wildlife Trust, September 2010, 336 pp., 48 colour plates. Hard cover, £18.00 (plus ,2.70 postage & packing). ISBN 978 0 9556188-2-6. Available from Atlas Sales, Surrey Wildlife Trust, School Lane, Pirbright, Woking, Surrey, GU24 0JN, Tel: 01483 795451; website: www.surreywildlifetrustgifts.org.uk



This book is the twelfth in the admirable series being published on the fauna and flora of the south-eastern English county of Surrey. In contrast to many of the earlier books in the series, which dealt with taxonomic groups that have relatively few British species, such as ladybirds or ants, this book covers a relatively large number of species (208 wasps in Surrey). It is therefore all the more remarkable that it has been published a mere two years after a previous book by the same author on the *Bees of Surrey* (see ICN No. 58) and not many more years after his *Grasshoppers and crickets of Surrey*.

Although a book dealing with so many species cannot go into as much species-specific detail as some of the earlier books in the series, there is nevertheless a fascinating depth as well as breadth of coverage and a feast of excellent photographs. The photographs will help readers to identify species, in conjunction with a key to wasp families, which has been provided by Graham Collins.

As in other books in the series, there are introductory sections on the biology of the group of insects concerned, which in the case of wasps includes some highly fascinating life cycles, including various kinds of parasitism and cleptoparasitism. Also as in the other books, there is information about the county of Surrey and its habitats. Of the habitats, dry heathland is said to be by far the best for bees and wasps and, by British standards, is very well represented in Surrey, despite the small size of the county. The author points out that many of the key sites for wasps in Surrey have designated status and are therefore protected and managed by conservation organisations. He regards this designation as being of key importance but he regrets that there is no such protection for other sites which are also important but are classed as "brownfield". In Surrey, these mainly comprise old claypits, gravelpits and sandpits. He points out that old sandpits are now being land-filled much more quickly than previously; often before any records can be made. Special mention is made of Hambledon Claypit, where the rare mason wasp *Odynerus melanocephalus* occurs, together with its probable cleptoparasite *Pseudospinolia neglecta*.

The abundance of dry, sandy sites and a relatively warm, sunny climate probably explain why Surrey ranks highest in a list of eleven British counties for which total species-numbers of wasps and other aculeates are available. The author points out, however, that the total would probably be similar for the two adjoining Watsonian vice counties: West Sussex and North Hampshire, if the necessary information were available.



Another class of habitats mentioned are those present in deadwood. The author points out that the presence of a single good standing dead tree can add 30 to 40 wasp species to the list for a particular site.

The information on the species takes account of a total of about 46,000 records in Surrey, most of which date from 1985 onwards and have been used in the compilation of the *Provisional atlas of the aculeate Hymenoptera of Britain and Ireland*, published by the Bees, Wasps and Ants Recording Society. The author provides both a history of wasp recording in Surrey from 1830 to the present day and a description of a survey on which the present book is based. By comparing records from different periods, he analyses the changes that have taken place in the county's wasp fauna.

With regard to changes in status of the species, about 63% of them seem to have remained about the same since the year 1900, while about 18% show evidence of an increase. A further 10% show evidence of a decline. The remainder are not sufficiently recorded to be classified in this way. Also, many more species have been gained than lost since the start of the 20th century. The author concludes that, overall, wasps are doing better in Surrey than 100 years ago, partly because of climate warming.

In addition to an index of wasp species, the book includes five appendices, comprising a gazetteer of 248 sites, a list of literature references, a glossary / list of acronyms, an index of plants, listed by their common names and a list of useful addresses.

The "Surrey series" has been augmented by yet another excellent book, which will be greatly valued by readers all over the UK and beyond. With inflation, the price has crept up to, 18 but this remains extremely good value for money.

DL

A review of the impact of artificial light on invertebrates

by Charlotte Bruce-White and Matt Shardlow. Buglife – The Invertebrate Conservation Trust, Peterborough, UK, 2011, 32 pp. Downloadable from: <http://www.buglife.org.uk/News/newsarchive/News+Archive+2011/Save+bugs+from+light+>

The final version of this report was issued in May this year, following consultation on a draft at the end of 2010. It is the first publication to review comprehensively the evidence relating to all forms of light



pollution in relation to invertebrates, while also making recommendations for policy and for practical steps to mitigate the problems.

Readers will not be surprised to see that artificial night lighting is of particular concern owing to its ubiquity. Apart from attracting insects directly, often with fatal results from contact with hot surfaces or exposure to predation, night lighting disrupts the many aspects of invertebrate behaviour that are influenced by natural periods of light and dark.

A less obvious but potentially very serious problem is caused by artificial surfaces that reflect polarised light. Many insects, especially aquatic species, have evolved an attraction for naturally polarised light, which is mainly associated with water bodies. Artificial surfaces like shiny car roofs or shiny tarmac have long been known to attract insects such as water beetles but a less obvious and more recent development has been the huge proliferation of other polarising surfaces such as solar panels and plastic sheeting on agricultural fields. Insects are exposed to increased predation in these situations and they tend to deposit their eggs on what appear to be aquatic habitats, with the resulting desiccation and death of all the eggs.

Buglife's report recommends a number of cheap and practicable solutions as follows:

- Incorporating patterns of rough or painted glass on the solar panels to break up the polarised light.
- Switching off outdoor lights – especially decorative and advertising lighting – between midnight and 5 a.m., when few people are active.
- Incorporating motion-sensors to switch off security and footpath lighting when not required.
- Reducing polarised light pollution by locating car parks away from water bodies and using rough tarmac surfaces.
- Avoiding bulbs that emit ultra-violet light, to which invertebrates are most sensitive.
- More careful planning of lighting schemes in sensitive locations such as conservation areas, ponds, rivers and the sea.
- Routinely including certain light pollution data in Environmental Impact Assessments.
- Identifying and protecting wildlife-important areas that currently have low lighting levels, and designating new Dark Sky Preserves.



OBITUARY

Derek Lott

Dr Derek Lott, who died on Sunday, 19th June 2011, contributed a great deal to invertebrate conservation in the UK. For many years until 2009, he was a member of Invertebrate Link (JCCBI), representing the Balfour Browne Club, which specialises in water beetles. For much of that time, he was employed by the Leicester Museums as Keeper of Natural History and subsequently as Curator of Natural Sciences. As such, he was an active supporter of the Biology Curators' Group and later of the National Federation for Biological Recording. In 2004, when cutbacks led to re-organisation at Leicester, he set up his own consultancy, "Stenus Research", named after a genus of staphylinid beetles, and undertook surveys for various organisations, including the Countryside Council for Wales.

As well as being the author of numerous scientific articles, Derek published a number of excellent guides for conservation workers. These included "*Biodiversity data needs for local authorities and National Park authorities*", which was published under the auspices of the Association of Local Government Ecologists (ALGE). Together with fellow Invertebrate Link member Alan Stubbs, he produced the very useful leaflet "*Guidelines to local BAP groups on the selection of priority habitats for invertebrates*", which emphasises the importance of biotopes that have elsewhere been neglected.

As an expert on various groups of beetles, Derek was well known in the coleopterists' community and was a major contributor of British and Irish records. He made his Coleoptera dataset, comprising 61,366 records, available to the National Biodiversity Network (NBN) and, at the time of his untimely death from cancer, had been working on a series of new keys to British staphylinid beetles, much needed by recorders. He also served the NBN as the representative of ALGE and as the chairman of the NBN's former Local Records Centre Steering Committee. For his staunch support of the NBN, he was awarded honorary membership of the NBN Trust last year.

Derek was a Fellow of the Royal Entomological Society and a member of the Amateur Entomologists' Society and of the British Entomological & Natural History Society. He also took an active part in local societies, including the Leicestershire Literary & Philosophical Society and the Loughborough Naturalists' Club.

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